

Appl. No. 10/032,962
RestrictResp/Amdt dated December 9, 2004
Reply to Office Action of November 15, 2004

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Previously presented) A balloon for a balloon dilatation catheter, comprising:
a balloon body having an expandable region and a balloon waist, the balloon waist including a plurality of voids;
wherein the plurality of voids are shaped and placed such that the balloon waist will have a reduced profile subsequent to thermal reformation.

2. (Previously presented) A balloon for a balloon dilatation catheter as in claim 1, wherein the balloon waist has a material volume per unit length, and wherein the plurality of voids reduce the material volume per unit length.

3. (Previously presented) A balloon for a balloon dilatation catheter as in claim 2, wherein the material volume per unit length decreases in the distal direction.

4. (Previously presented) A balloon for a balloon dilatation catheter as in claim 1, wherein the size, number and position of the plurality of voids are selected to cause the unit length to decrease in a distal direction.

5. (Previously presented) A balloon for a balloon dilatation catheter as in claim 1, wherein a proximal balloon waist and a distal balloon waist include a plurality of voids, wherein the plurality of voids are shaped and configured such that the balloon waists will have a reduced profile subsequent to thermal reformation.

6. (Cancelled)

Appl. No. 10/032,962
RestrictResp/Amtdt dated December 9, 2004
Reply to Office Action of November 15, 2004

7. (Withdrawn) A balloon dilatation catheter as in claim 1, wherein the plurality of voids are wedge shaped.

8. (Previously presented) A balloon for a balloon dilatation catheter as in claim 1, wherein the plurality of voids are circular.

9. (Withdrawn) A balloon dilatation catheter as in claim 1, wherein the plurality of voids are rectangular.

10. (Withdrawn) A balloon dilatation catheter as in claim 1, wherein the plurality of voids are diamond shaped.

11. (Previously presented) A balloon for a balloon dilatation catheter, comprising:
a molded balloon, the balloon being molded to have an expandable region, a balloon waist and a length extending from a proximal end of the balloon waist to a distal end of the balloon waist, the balloon waist having a material volume per unit length, wherein material is removed from the balloon waist to achieve the material volume per unit length.

12. (Previously presented) A balloon for a balloon dilatation catheter as in claim 11, wherein the material volume per unit length decreases from the proximal end to the distal end.

13. (Previously presented) A balloon for a balloon dilatation catheter as in claim 11, wherein the material volume per unit length is controlled by the formation of a plurality of voids in the balloon waist.

14. (Previously presented) A balloon for a balloon dilatation catheter as in claim 13, wherein the size, number and position of the plurality of voids are selected to cause the material volume per unit length.

Appl. No. 10/032,962
RestrictResp/Amdt dated December 9, 2004
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15. (Withdrawn) A balloon dilatation catheter as in claim 13, wherein the plurality of voids are wedge shaped.

16. (Previously presented) A balloon for a balloon dilatation catheter as in claim 13, wherein the plurality of voids are circular.

17. (Withdrawn) A balloon dilatation catheter as in claim 13, wherein the plurality of voids are rectangular.

18. (Withdrawn) A balloon dilatation catheter as in claim 13, wherein the plurality of voids are diamond shaped.

19. (Withdrawn) A method of manufacturing a balloon catheter comprising the steps of:
providing a catheter shaft having a proximal end and a distal end;
providing an expandable balloon having a waist and an expandable portion;
forming a plurality of voids in the balloon waist;
thermally reforming the waist to close the voids and to reduce the profile of the waist;
and
attaching the waist to the distal end of the catheter shaft.

20. (Withdrawn) A method of manufacturing a balloon catheter as in claim 19, wherein the step of attaching the waist comprises a thermal bonding process.

21. (Withdrawn) A method of manufacturing a balloon catheter as in claim 20, wherein the steps of thermally reforming the waist and attaching the waist are performed simultaneously.

22. (Withdrawn) A method of manufacturing a balloon catheter as in claim 19, wherein the balloon waist comprises a polymer which melts and flows into the plurality of voids during the step of thermal reforming.